

**IB Chemistry SL/HL 1&2 - 2010-2011**Mr. Brakke ([martinb@eca.com.ve](mailto:martinb@eca.com.ve)) or (BrakkeIBchem1.wikispaces.com)

Room #401

*Welcome to IB Chemistry! I am new to ECA and whether you are a new student or have been here for several years, we are now on a journey together with a common end goal: to have a positive experience in Chemistry while reaching each individual's potential. The IB program (and an education at ECA) is meant to be well rounded and multicultural and as your teacher I will do my best to support you in all your academic and extracurricular activities.*

**Course Description:** IB Chemistry is a two year course. Areas of study include: (sequence may be modified)

	<b>Standard Level</b>	<b>Higher Level</b>
<b>Core</b>	<u>Topic 1:</u> Quantitative chemistry <u>Topic 2:</u> Atomic structure <u>Topic 3:</u> Periodicity <u>Topic 4:</u> Bonding <u>Topic 5:</u> Energetics <u>Topic 6:</u> Kinetics <u>Topic 7:</u> Equilibrium <u>Topic 8:</u> Acids and Bases <u>Topic 9:</u> Redox <u>Topic 10:</u> Organic chemistry <u>Topic 11:</u> Measurement & data processing	<u>Topic 1:</u> Quantitative chemistry <u>Topic 2:</u> Atomic structure <u>Topic 3:</u> Periodicity <u>Topic 4:</u> Bonding <u>Topic 5:</u> Energetics <u>Topic 6:</u> Kinetics <u>Topic 7:</u> Equilibrium <u>Topic 8:</u> Acids and Bases <u>Topic 9:</u> Redox <u>Topic 10:</u> Organic chemistry <u>Topic 11:</u> Measurement & data processing
<b>Additional Higher Level</b>		<u>Topic 12:</u> Atomic structure <u>Topic 13:</u> Periodicity <u>Topic 14:</u> Bonding <u>Topic 15:</u> Energetics <u>Topic 16:</u> Kinetics <u>Topic 17:</u> Equilibrium <u>Topic 18:</u> Acids and bases <u>Topic 19:</u> Redox <u>Topic 20:</u> Organic chemistry
<b>Options</b>	<u>Option B:</u> Human Biochemistry <u>Option E:</u> Environmental chemistry.	<u>Option B:</u> Human Biochemistry <u>Option E:</u> Environmental chemistry.
<b>Theory Hours</b>	80 core + 30 Options	135 core + 45 Options
<b>Internal Assessment</b>	30 IA + 10 Group 4 Project	50 IA + 10 Group 4 Project
<b>Total</b>	<b>150 hours</b>	<b>240 hours</b>

**Course Standards:** These are the standards, as adopted by the science dept. at ECA, in which students will be assessed.

SC1: Understands atmospheric processes & the water cycle.

SC2: Understands the composition, structure, & placement of Earth & universe.

SC6: Understands the structure and property of matter.

SC7: Understands the sources and properties of energy.

SC8: Understands forces and motion.

SC9: Designs experiments.

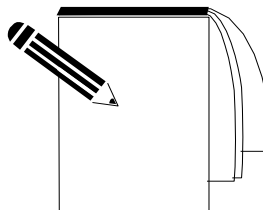
SC10: Collects and processes data

SC11: Draws conclusions and evaluates experiments.

SC12: Manipulates equipment.

SC13: Understands collaborative and communication skills.

## Assessment



### **External Assessment – (May 10<sup>th</sup>, 2011 for SL/HL 2)**

The external IB assessment consists of 3 written papers. These papers make up 76% of the final grade.

Paper 1: is made up of multiple choice problems (SL – 30 questions, HL – 40 questions). The questions are based on the core topics (for SL and HL) and the additional higher material (for HL only). No marks are deducted for incorrect answers. Calculators and data-booklets are not permitted. You are provided with a periodic table.

Paper 2: is based on the core topics (for SL and HL) and the additional higher material (for HL only). Section A consists of a data-based question, which will require students to analyze a given set of data. The rest of section A is short answer questions. In Section B students must answer two questions from a choice of four (HL) or one question from a choice of three (SL). These questions will require extended responses but you may answer in point form rather than writing paragraphs. A calculator is required for this paper and you will be provided with a data-booklet.

Paper 3: is based on the options. HL students need to answer several short-answer questions and an extended response question in each of the two options studied. SL students answer several short answer questions in each of the two options studied. A calculator is required for this paper and you will be provided with a data-booklet.

### **Internal Assessment**

The Internal Assessment (IA) is the practical work that is carried out in class and is assessed by the teacher. It is worth 24 % of the final IB grade. Practical work is graded according to criteria set by the IB.

These criteria are **Design, Data collection and processing** and **Conclusion and evaluation, Manipulative skills and Personal skills**.

Completion of the Group 4 project is also part of the internal assessment. It is a collaborative project between all of the science disciplines (i.e. Group 4 IB courses).

## Expectations

In order to be successful students of IB Chemistry you will be expected to take greater initiative with and responsibility for your own learning. Some of the expectations of you as IB students are outlined below.

### **In Class**

It is expected that at the start of the lesson that you will have all the necessary equipment out (see below).

All students in the class have a right to learn and I have the right to teach. Courtesy and respect to other people in the class should be shown at all times.

### **At Home**

As an IB student you should be **averaging at least ½ hour** of work each day for this course.

You should expect homework after almost every lesson. Regular review is an essential part of the course. Having a study timetable for yourself would help to find time to complete sufficient review in all of your subjects.

### **Missed Classes**

Should you, for whatever reason, miss a class or work, it is **your** responsibility to catch up. This should be done before (or as soon as) you return to school (definitely before the next Chemistry lesson). Each lesson that we do will be found as a separate document on my class. The website and folder will also contain electronic versions of the syllabus and data booklet. I will not come looking for you to give you work or tell you about tests or assignments. You can look on the wikispace page, BrakkeIBchem1.wikispaces.com, come and see me personally or e-mail me at [martinb@eca.com.ve](mailto:martinb@eca.com.ve).

## Assessment and Grading

Tests and quizzes: All questions on tests and quizzes will be IB or IB style questions. They will be graded according to IB mark schemes. Questions generally begin with a verb. These verbs indicate a specific way of responding to a question. Definitions of the verbs are given at the end of this booklet. First year students will be taught all material (SL/HL) within each topic (ex. SL/HL Topic 3 will be presented along with HL Topic 13 – both being Periodicity). In the second year there may be differentiated material for SL and HL students on exams.

Homework: Homework will be assigned each class day. Late homework will be accepted until the following class period, but recorded and assessed as late – UNLESS work is discussed in class prior to completion in which case the student will receive a ZERO. If you are absent the day an assignment is due, you are responsible for completing two assignments the day you return to class: the old assignment that was due on the absent day and the new assignment that was assigned on the absent day. Note, when absent, it is the student's responsibility to find out about any assignments they might have missed.

Lab Reports: All practical work will be graded according to the IB criteria to give an IB score of 0, 1 or 2 for applicable sections on that lab (you will know which are being assessed on an IB scale ahead of time) and will be converted to an ECA grade. All other sections will be assessed on an ECA 7pt scale.

Group 4 Project: All SL/HL science students will take part in a group 4 project near the end of the first year. This project will be completed as a science department and is focused on extending learning beyond the classroom in a service or experience project. (10 hrs)

Plagiarism: It is expected that all work submitted reflects your own thinking or is properly referenced. It is unethical to use someone's ideas (whether a friend's or a published author's) and pass them off as your own. All ideas that are not your own should be cited by being followed by the author's name in parentheses. Page numbers should also be given for direct quotes. Any cited works should be included in a bibliography – the format for which is below.

Author, Title (edition), Publisher, Year of publication.

Extensions: Should you require an extension for an assignment or test you should speak to me well before the due date. **Extensions requested on the due date will not be granted.** Do not assume that an extension will be given – it is solely at my discretion and will depend on the circumstances.

## Materials

Depending on whether you are studying SL or HL chemistry you will be provided with copies of one or more of the following textbooks. All students (year 1 and 2) will begin with the first 2 in bold (they may be left at home), the other three may be used as in-class resources or signed out on an individual basis depending on need.

- **Chemistry course companion (1<sup>st</sup> ed.) by Geoff Neuss**
- **IB Study Guides: Chemistry (1<sup>st</sup> ed.) by Geoff Neuss**
- Chemistry: For use with the IB Diploma Program (2<sup>nd</sup> ed.) by Green and Danji
- Chemistry in Context (5<sup>th</sup> ed.) by Hill and Holman
- Chemistry (6<sup>th</sup> ed.) by Zumdahl

**Bring to class:** Generally you will be required to read relevant sections of the textbook to prepare for a lesson or as a review. You do not need to bring your textbook to every lesson but having your IB Study Guide with you may be helpful. I expect you to come to every lesson prepared with pens (more than one!!), pencil, paper, calculator, and computer. You should also come with an electronic copy of your syllabus and IB Subject Guide, as well as your internal assessment marking form (PSOW). You will be provided with these during the first lesson. Should you require additional *resources* for your own study or for an assignment, you are more than welcome to use the resources on my bookshelf. If you need to take them home overnight; please check with me first so that I know where they are if I need them.

**Laptop use:** You will need to have your laptop in each class (you may charge at your desk). You should be logged in to your computer (and to my SynchronEyes if requested) and have your screen closed within 1 minute of the beginning of class. After this point, you will be recorded as tardy and sent to check in with the office.

**Two three-hole binders:** I will supplement the textbook and study guide with plenty of notes (which I will write up on the whiteboard or Smartboard) and lots of handouts (data-booklet, syllabus, marking form, photocopies, worksheets, quizzes, tests, diagrams etc.) You will need one three-ring binder so that you can keep all these loose papers safe and organized. This can be a small binder (2-3 cm) that is used for Chemistry specifically, or a section in your school binder. You will be provided with use of the filing cabinet in the classroom to limit the transportation of non-relevant material.

You will need another binder which will become your IB practical portfolio. This will contain all of the practical work you will do over the next two years. It is a very important binder as it may be sent to the IB examiners at the end of the course. It must stay in room 401 at all times as serious problems arise if it is lost. Under special circumstances you may take it home for revision purposes, but make sure you talk to me first.

### **Having Problems? COME AND SEE ME!!!!**

Whether it is a problem with the course content, getting started (or finished!) on an assignment or knowing how to approach your studies, please come and talk to me – the sooner the better.

### **Definitions of Action Verbs.**

*IB questions will use the following action verbs; it is essential that you understand what each of them mean.*

<i>Define</i>	give the precise meaning of a word or phrase as concisely as possible
<i>State</i>	give a specific name or other brief answer. No supporting argument or calculation is necessary.
<i>List</i>	give a sequence of names or other brief answers with no elaboration. Each one is clearly distinguished from the others. The number required may be specified.
<i>Draw</i>	represent by means of pencil lines. Add labels unless told not to do so.
<i>Measure</i>	find a quantity and state it using a number and SI unit.
<i>Estimate</i>	find the most likely value for an unknown quantity, based on the information provided and scientific knowledge.
<i>Outline</i>	give a brief account or summary, including essential information only.
<i>Describe</i>	give a detailed account, giving all the relevant information.
<i>Calculate</i>	find an answer using mathematical methods. Show the working unless instructed not to do so.
<i>Identify</i>	find an answer from a number of possibilities.
<i>Apply</i>	use an idea, equation, principle, theory or law in a new situation.
<i>Compare</i>	give an account of similarities and differences between two (or more) items, referring to both (all) of them throughout. Comparisons can be given using a table.
<i>Annotate</i>	add brief notes to a diagram, drawing or graph.
<i>Suggest</i>	propose a hypothesis or other possible answer.
<i>Discuss</i>	give an account including, where possible, a range of arguments, assessments of the relative importance of various factors or comparison of alternative hypotheses.
<i>Explain</i>	give a clear account including causes, reasons or mechanisms.
<i>Deduce</i>	reach a conclusion from the information given.
<i>Predict</i>	give an expected result.
<i>Evaluate</i>	assess the implications and limitations.
<i>Design</i>	produce a plan, object, simulation or model.
<i>Determine</i>	find the only possible answer. <i>Analyze</i> interpret data to reach conclusions.

Please sign and return the following signature page on the date requested as it will be kept on file. You are asked to keep this document in your daily notebook for reference. An electronic copy may be downloaded from the class webpage if desired (BrakkeIBchem.wikispaces.com).

I, \_\_\_\_\_ (print student's name), and my parent/guardian have received, read and discussed the policies and expectations for Mr. Brakke's IB Chemistry SL/HL 1&2 class.

Parent/Guardian Name: \_\_\_\_\_

Date: \_\_\_\_\_

Parent Signature: \_\_\_\_\_

Student Name: \_\_\_\_\_

Date: \_\_\_\_\_

Student Signature: \_\_\_\_\_